

## CLAIMS

1. A dynamic vibration absorber comprising: a weight; a frame body which surrounds said weight; a plurality of vertically mounted U-shaped leaf springs which are interposed between said frame body and said weight so as to hold said weight with respect to said frame body movably with respect to all directions in a plane and immovably in a vertical direction perpendicular to the plane; and a damping mechanism for damping the vibration of said weight in the plane.
2. The dynamic vibration absorber according to claim 1, wherein said weight is formed substantially in the shape of a regular polygon including a regular triangle or a circle in a plan view.
3. The dynamic vibration absorber according to claim 1 or 2, wherein said frame body is formed substantially in the shape of a regular polygon including a regular triangle or a circle in a plan view.
4. The dynamic vibration absorber according to any one of claims 1 to 3, wherein said frame body has a pair of X-direction vertical wall portions opposed to each other in an X direction in the plane with said weight disposed therebetween and a pair of Y-direction vertical wall portions opposed to each other in a Y direction which intersects the X direction in the plane with said weight disposed therebetween, and wherein at least one of said leaf springs is interposed between each of said pair of X-direction vertical wall portions and said weight, such that one edge portion thereof extending in the vertical direction is secured to said X-direction vertical wall portion, and that another edge portion thereof extending in the vertical direction is secured to said weight respectively, while at least another one of said leaf springs is interposed between each of said pair of Y-direction vertical wall portions and said weight, such

that one edge portion thereof extending in the vertical direction is secured to said Y-direction vertical wall portion, and that another edge portion thereof extending in the vertical direction is secured to said weight respectively.

5. The dynamic vibration absorber according to claim 4, wherein said plurality of leaf springs arranged in parallel are interposed between each of said pair of X-direction vertical wall portions and said weight and between each of said pair of Y-direction vertical wall portions and said weight, each of said leaf springs being secured at the one edge portion thereof to said vertical wall portion and at the other edge portion thereof to said weight, respectively.

6. The dynamic vibration absorber according to claim 4 or 5, wherein the Y direction is perpendicular to the X direction.

7. The dynamic vibration absorber according to any one of claims 1 to 6, wherein the damping mechanism includes a magnetic field generating body which is fixed to one of said weight and said frame body and generates a magnetic field and a plate-like electric conductor which is fixed to another one of said weight and said frame body and generates an eddy current by its relative movement with respect to said magnetic field generating body.

8. The dynamic vibration absorber according to claim 7, wherein said magnetic field generating body has a permanent magnet which generates a pair of magnetic poles of mutually different polarities which oppose each other with a gap therebetween so as to generate a magnetic field at a central portion of said electric conductor.

9. The dynamic vibration absorber according to any one of claims 1 to 8, wherein said dynamic vibration absorber is tuned to a natural frequency of a structure where said dynamic vibration absorber is installed.

10. A dynamic vibration absorbing apparatus comprising a plurality of dynamic

vibration absorbers according to any one of claims 1 to 9, wherein a natural frequency for said weight of at least one of said dynamic vibration absorbers is different from a natural frequency for said weight of another one of said dynamic vibration absorbers.

11. The dynamic vibration absorbing apparatus according to claim 10, wherein the mass of said weight of said at least one of said dynamic vibration absorbers is different from the mass of said weight of said other one of said dynamic vibration absorbers.

12. The dynamic vibration absorbing apparatus according to claim 10 or 11, wherein a spring constant of said at least one of said dynamic vibration absorbers is different from a spring constant of said other one of said dynamic vibration absorbers.

13. The dynamic vibration absorbing apparatus according to any one of claims 10 to 12, wherein a damping coefficient of said at least one of said dynamic vibration absorbers is different from a damping coefficient of said other one of said dynamic vibration absorbers.